

David Sweeney CV

Contact: +44 7570-633807 | ds344@st-andrews.ac.uk | dsweeney@marecotel.org

Education

- PhD Statistics: University of St Andrews (2025-present)
 - Taking a deeper dive into goose-beaked whale population consequences of disturbance (PCoD)
 - Research supervised by Len Thomas, Enrico Pirotta, Gregory Schorr, and Erin Falcone
- MSc Statistics: University of St Andrews (2024-2025)
 - Graduated with distinction and placed on the Deans' List for academic excellence
 - Using mark-recapture models to understand goose-beaked whale residency in Southern California
 - Research supervised by Len Thomas, Enrico Pirotta, Gregory Schorr, and Erin Falcone
- BS Biology: Calvin College (2015-2019)
 - Graduated with Honors
 - GPA: Within Major = 3.877; Overall = 3.798
 - Au Sable Institute of Environmental Studies
 - Participation in the 2016 Summer Session 2 at the Pacific Rim Campus
 - Courses taken: Marine Biology and Marine Mammals

Research Employment

- 2024-present: Centre for Research into Ecological and Environmental Modelling ([CREEM](#))
 - Postgraduate Researcher (MSc and PhD)
 - Supervised by Len Thomas and Enrico Pirotta
- 2019-present: Foundation for Marine Ecology and Telemetry Research ([MarEcoTel](#))
 - Full-time from 2019-2024 and then affiliate researcher from 2024-present
- 2018: Duke University Marine Lab
 - Undergraduate Researcher (NSF REU)
 - Supervised by Andrew Read and Nicola Quick
 - Short-finned pilot whale (*Globicephala macrorhynchus*) near-surface behavioral states in relation to previous dive characteristics
- 2017-2019: Calvin University
 - Undergraduate Researcher
 - Supervised by Stacy DeRuiter

- Developing Software Tools for Analysis of Data from Animal-Borne Movement Loggers

Teaching Employment

- 2025-present: University of St Andrews
 - Teaching Assistant for Applied Statistical Modelling using GLMs
 - Supervised by Fergus Chadwick
- 2018-2019: Calvin College
 - Lab Assistant for Human Anatomy
 - Supervised by Ryan Bebej
 - Teaching Assistant for Oceanography
 - Supervised by Ralph Stearley

Peer-Reviewed Publications

In press:

- Barlow, J., Baird, R. W., Badger, J., Schorr, G. S., Falcone, E. A., Coates, S. N., Tyack, P. L., Read, A. J., Hickmott, L. S., Durban, J. W., Claridge, D., de Soto, N. A., Gonzalez, D. M., Visser, F., Oudejans, M. G., DeRuiter, S., **Sweeney, D. A.**, Rone, B. K., & Watwood, S. L. (2025). A Comparison of Diving Behavior of Goose-Beaked and Dense-Beaked Whales From Tagging Studies in Multiple Ocean Basins. *Marine Mammal Science*. <https://doi.org/10.1111/mms.70070>
- Coates, S. N., **Sweeney, D. A.**, Falcone, E. A., Watwood, S. L., Rone, B. K., DeRuiter, S. L., Barlow, J., Dolan, K. A., Morrissey, R. P., DiMarzio, N. A., Jarvis, S. M., Andrews, R. D., & Schorr, G. S. (2024). Insights into foraging behavior from multi-day sound recording tags on goose-beaked whales (*Ziphius cavirostris*) in the Southern California Bight. *Frontiers in Marine Science*, 11, 1415602. <https://doi.org/10.3389/fmars.2024.1415602>
- Fahlman, A., Schorr, G. S., **Sweeney, D. A.**, Rone, B. K., Coates, S. N., Allen, A. S., López, L. M. M., Jarvis, S. M., & Falcone, E. A. (2025). Modelling the effect of varying metabolic rate and cardiac output on estimated tissue and blood O₂ and CO₂ levels in an extreme deep-diver, the goose-beaked whale (*Ziphius cavirostris*). *Experimental Physiology*. <https://doi.org/10.1113/EP093021>
- Rone, B. K., **Sweeney, D. A.**, Falcone, E. A., Watwood, S. L., & Schorr, G. S. (2022). Movements and diving behavior of Risso's dolphins in the Southern California Bight. *Frontiers in Marine Science*, 9, 873548. <https://doi.org/10.3389/fmars.2022.873548>
- Sweeney, D. A., DeRuiter, S. L., McNamara-Oh, Y. J., Marques, T. A., Arranz, P., & Calambokidis, J. (2019). Automated peak detection method for behavioral event identification: Detecting *Balaenoptera musculus* and *Grampus griseus* feeding attempts. *Animal Biotelemetry*, 7(1), 7. <https://doi.org/10.1186/s40317-019-0169-3>

- **Sweeney, D. A.**, Schorr, G. S., Falcone, E. A., Rone, B. K., Andrews, R. D., Coates, S. N., Watwood, S. L., DeRuiter, S. L., Johnson, M. P., & Moretti, D. J. (2022). Cuvier's beaked whale foraging dives identified via machine learning using depth and triaxial acceleration. *Marine Ecology Progress Series*, 692, 195–208. <https://doi.org/10.3354/meps14068>

In review:

- None

In prep:

- IG LIMPET
- Blubber
- IG sightings info
- Zc HHMM BRS

Funding Acquisition Involvement

- Taking a deeper dive into goose-beaked whale population consequences of disturbance (PCoD)
 - 5-year project (2024-2029) for \$629,508 funded by the US Office of Naval Research
 - PIs: Gregory Schorr and Len Thomas
 - Co-investigators: **David Sweeney**, Enrico Pirotta, Erin Falcone, Stephanie Watwood, Stacy DeRuiter, Gustavo Cárdenas-Hinojosa
- SOARing for data
- IG

Posters and Oral Presentations

Research presentation:

- DeRuiter, S., Johnson, M., Swift, R., Harris, C., Marques, T., McNamara-Oh, Y. J., and **Sweeney, D.** (2019). Tools and Training to Enhance Capacity for Analyzing High-Resolution Tag Data [co-presented]. *ONR Marine Mammal and Biology Program Review 2019*. Alexandria, VA, USA: 23 April 2019.
- **Sweeney, D. A.** (2019). Short-finned pilot whale (*Globicephala macrorhynchus*) near-surface behavioral states in relation to previous dive characteristics [seminar]. *Calvin College Department of Biology*. Grand Rapids, MI, USA: 1 February 2019.
- **Sweeney, D. A.** (2017). Event Detection [workshop]. *Analysis of Data from High-Resolution Animal-Borne Tags*. University of St Andrews, Scotland: 7-9 August 2017.

Research poster:

- **Sweeney, D.**, Falcone, E., Watwood, S., DeRuiter, S., Schorr, G. (2022) Cuvier's Beaked Whale Behavioral Responses Persist After Conclusion of Some Navy Sonar Exposures. *24th Biennial*

Conference of the Society for Marine Mammalogy. West Palm Beach, Florida, USA: 1-5 August 2022

- **Sweeney, D. A.** (2018). Short-finned pilot whale (*Globicephala macrorhynchus*) near-surface behavioral states in relation to previous dive characteristics. *West Michigan Regional Undergraduate Science Research Conference*. Grand Rapids, MI, USA: 10 November 2018.
- **Sweeney, D. A.** (2018). Short-finned pilot whale (*Globicephala macrorhynchus*) near-surface behavioral states in relation to previous dive characteristics. *Calvin Science Division Summer Research Poster Fair*. Grand Rapids, MI, USA: 19 October 2018.
- **Sweeney, D. A.** and Oh, Y. J. (2017). Software Tools for Analysis of Data from High-Resolution Animal-Borne Tags. *West Michigan Regional Undergraduate Science Research Conference*. Grand Rapids, MI, USA: 4 November 2017.
- **Sweeney, D. A.** and Oh, Y. J. (2017). Software Tools for Analysis of Data from High-Resolution Animal-Borne Tags. *Calvin Science Division Summer Research Poster Fair*. Grand Rapids, MI, USA: 20 October 2017.

Other:

- **Sweeney, D. A.** (2024) Encountering God in Creation: Spiritual Growth Through Scientific Understanding [presentation]. *Central Kitsap Presbyterian Church's Conference on Science and the Christian Life: The Word and the World*. Bremerton, WA, USA: 8 June 2024
- **Sweeney, D. A.** (2024) Marine Ecology and Telemetry Research [outreach presentation]. *South Kitsap High School AP Biology*. Port Orchard, WA, USA: 6 June 2024
- **Sweeney, D. A.** (2023) Marine Ecology and Telemetry Research [outreach presentation]. *South Kitsap High School AP Biology*. Port Orchard, WA, USA: 15 June 2023
- **Sweeney, D. A.** (2018). Insights into Modern Marine Mammal Research [guest lecture]. *Calvin College Department of Geology, Geography, and Environmental Studies*. Grand Rapids, MI, USA: 5 December 2018.

Software Development and Management

- [MarEcoTel](#)
 - GitHub organization developer
 - R and Matlab code development
 - [ZcTransCMR](#)
 - Bayesian continuous-time open-population mark-recapture modeling
 - [WCtagproc](#)
 - Tools for processing Wildlife Computers satellite tag data
- [animaltags](#)
 - Software for data from high-resolution movement tags (<https://animaltags.org/>)
 - GitHub organization developer
 - R, Matlab, and Octave code development

Field Work Experience

- Southern California Offshore Range (SCORE); Southern California Anti-Submarine Warfare Range (SOAR); Point Mugu Sea Range
 - Vessels: Phoenix and Physalus (2019-2024)
 - Duties: Photo-ID, Database entry, RHIB driving (including for LIMPET tagging and biopsies)
 - Species: Cuvier's beaked whales, Fin whales, Bryde's whales, Delphinus spp., Humpback whales
- Guadalupe Island, Mexico
 - Vessel: Azteca (2021-2024)
 - Duties: Drone photogrammetry, Photo-ID, Database entry
 - Species: Cuvier's beaked whales, Bottlenose dolphins, Humpback whales
- Strait of Juan de Fuca and outer coast of Washington, USA
 - Vessel: Borealis (2021-2023)
 - Duties: Photo-ID, Database entry, RHIB driving
 - Species: Killer whales, Humpback whales, Dall's and Harbor porpoises
- Hood Canal, WA
 - Vessel: On Porpoise (2022-2023)
 - Duties: Harbor porpoise survey visual observer, Pontoon boat driving, Database entry
 - Species: Harbor porpoise, Harbor seal, California sea lion, Steller sea lion
- UAS Experience:
 - Remote Pilot Certified (United States FAA #4555354)



Scholarships/Awards

- Handsel Scholarship (University of St Andrews)
- 2019 Ten Broek Excellence in Biology Research Award (Calvin College)
- Tuition Waiver-CCCU TWEP (Calvin College)
- Honors Fellows Scholarship (Calvin College)
- Presidential Scholarship (Calvin College)
- Au Sable Fellowship (Au Sable Institute of Environmental Studies)

- Swierenga, John R. & Marie A. Brass Scholarship (Calvin College)
- Friends of Music Scholarship (Calvin College)

Journal Peer-Reviews

- Marine Biodiversity Records
- Biology Letters (co-reviewer)

Non-Research Work and Notable Volunteer Experiences

- Administrator of Cornerstone St Andrews church (2025-present)
- Co-founder of Central Kitsap Presbyterian Church's Community Garden (2021-2024)
- Assistant Youth Group Director
 - Silverdale Lutheran Church (2019-2021)
 - Central Kitsap Presbyterian Church (2021-2024)
- Assistant Caretaker of Olympic Lutherhaven in Bremerton, WA (2020-present)
- Knollcrest Dining Hall Team Member at Calvin College (Spring 2019)
- Lifeguard at Six Flags Hurricane Harbor in Gurnee, IL (2013-2016)
 - Leadership Team Member (2015-2016)